

CLAIMS

1. Method for cooling a moving metal strip, of the type in which:

- the metal strip (2) to be cooled is moved in a continuous manner,
- the strip (2) is pressed onto a main cooling roller (10) which can be moved about the axis (X-X) thereof so that the strip forms an arc whose inner face delimits with the outer face of the main cooling roller a contact zone which is suitable for discharging part of the heat of the strip towards the inner side of this roller, and
- the strip (2) is held in contact with the main cooling roller (10) by means of at least one support roller (14) on the outer face of the arc formed by the strip, the or each support roller being arranged substantially parallel with the main cooling roller (10) and so as to be movable in terms of rotation about the axis (Z-Z) thereof, characterised in that the or each support roller (14) is constituted, at least at the periphery, by a resiliently deformable and thermo-capacitive material, and in that the heat transmitted from the strip (2) to the or each support roller (14) is discharged by secondary cooling means (16) which are suitable for forming, with a portion of the outer face of the or each support roller (14), a zone for transferring heat towards these secondary cooling means (16).

2. Method according to claim 1, characterised in that the or each support roller (14) extends at least over the entire width of the strip (2) so as to apply to the outer face of the arc formed by the strip a pressure which is substantially homogeneous over this entire width.

3. Method according to claim 1 or 2, characterised in that the temperature of the strip (2) pressed at the inlet of the main cooling roller (10) is lower than the degradation temperature of the material which constitutes the support roller(s) (14).

4. Method according to claim 3, characterised in that the temperature of the strip pressed at the inlet is lower than approximately 200°C.

5. Assembly for cooling a moving metal strip, the strip (2) to be cooled being moved in a continuous manner, of the type comprising a main cooling roller (10), onto which the strip (2) is pressed so as to form an arc whose inner face delimits, with the outer face of this roller (10), a contact zone which is suitable for discharging part of the heat of the strip towards the inner side of the main cooling roller, and at least one support roller (14) on the outer face of the arc formed by the strip, which roller is suitable for holding the strip in contact with the main cooling roller (10), the or each support roller being arranged substantially parallel with the main cooling roller and so as to be movable in terms of rotation about the axis (Z-Z) thereof, characterised in that the or each support roller (14) is constituted, at least at the periphery, by a resiliently deformable and thermocapacitive material, and in that the assembly (1) comprises secondary cooling means (16) which are suitable for forming, with a portion of the outer face of the or each support roller (14), a zone for transferring heat towards these secondary cooling means in order to discharge the heat transmitted from the strip (2) to the or each support roller.

6. Assembly according to claim 5, characterised in that the or each support roller (14) is produced, at least at the periphery, from elastomer material, in particular from vulcanised silicone.

7. Assembly according to claim 5 or 6, characterised in that the material from which at least the periphery of the or each support roller (14) is constituted has a thermal conductivity coefficient of less than 1 W/m.K.

8. Assembly according to any one of claims 5 to 7, characterised in that the diameter of the or each support roller (14) is between approximately a quarter and a tenth of the diameter of the main cooling roller (10).

9. Assembly according to any one of claims 5 to 8, characterised in that the secondary cooling means comprise at least one secondary cooling roller (16) which is movable in terms of rotation about the axis (X'-X') thereof and which is arranged substantially parallel with the support roller(s) (14).

10. Assembly according to any one of claims 5 to 9, characterised in that the assembly comprises means for being supplied with a heat-exchanging fluid, which means are common to the main cooling roller (10) and to the secondary cooling means (16).